

AMENDMENT - IN THE CLAIMS

Applicant requests entry of the following amendment to claims 4-11, withdrawal of original claims 1-3 and 12-15 as non-elected claims without prejudice, the addition of new claims 16-26, and the right to seek further prosecution of the withdrawn claims either by joinder, petition of the restriction requirement, or through further prosecution in divisional and related applications. Applicant includes herein payment to cover extra fees for six additional claims not included in the original 20 covered by the initial application fee.

Claim 1 (withdrawn). An oligodeoxynucleotide (ODN) library comprising a plurality of oligodeoxynucleotides of specific length, at least one of the oligodeoxynucleotides comprising said ODN library being capable of interacting with a target genomic DNA, mRNA or protein when inserted into a DNA expression vector with the specific calling sequence for said oligodeoxynucleotide being embedded in said expression vector capable, said expression vector being capable of being introduced into a target cell to produce at least one of said oligodeoxynucleotides when induced by exposure to a chemical agent for interacting with genomic DNA, mRNA or protein with observable result.

Claim 2 (withdrawn). A process for identifying and isolating an oligodeoxynucleotide comprising the steps of:

- utilizing the ODN library of claim 1 to express a plurality of copies of at least one said oligodeoxynucleotide in the target cell;
- growing the target cells into a colony of cells;
- dividing the colony into paired colonies;
- exposing one of the paired colonies to a chemical agent capable of inducing expression of said at least one oligodeoxynucleotide by the cells of the exposed colony, causing the expressed oligodeoxynucleotide to interact with genomic DNA, mRNA or a protein to alter expression of a gene;
- observing the result in said exposed cells; and
- sequencing the DNA of the cells of the unexposed colony to identify the sequence of the library oligodeoxynucleotide that caused alteration of the gene.

Claim 3 (withdrawn). The method of claim 2 wherein said cells are bacteria strain DH5 α Pro.

Claim 4 (currently amended). ~~The~~ A bacterial single-stranded DNA (ssDNA) expression plasmid vector pssXG, comprising:

- (a) an inducible bacterial promoter;
- (b) a genetic sequence encoding a fully active reverse transcriptase (RT), located 3' of the inducible bacterial promoter; and
- (c) a ssDNA expression cassette for producing a ssDNA inside a cell, located 3' to the RT sequence and comprising in 5' to 3' order:
 - (i) a set of inverted tandem (IT) repeats for formation of a stem-loop structure,
 - (ii) a cloning site for cloning a sequence of interest (SOI), and
 - (iii) a primer binding site (PBS) sequence sufficient for initiation of reverse transcription inside a bacterial cell.

Claim 5 (currently amended). The plasmid bacterial ssDNA expression vector of claim 4 comprising a PBS having the sequence 5'-TGGTGCGTCCGAG-3' [Seq. ID No. 3].

Claim 6 (currently amended). A cell having the plasmid vector of claim 4 transformed therein.

Claim 7 (currently amended). ~~A prokaryotic cell having the plasmid~~ The vector of claim 4 ~~transformed therein-~~ further comprising a DNA enzyme sequence cloned into the cloning site of the vector, wherein the DNA enzyme sequence comprises a DNA enzyme catalytic domain flanked by target-binding domains each ranging in size from 3 to about 25 nucleotides in length.

Claim 8 (currently amended). The plasmid vector of ~~claim 4~~ comprising a sequence coding for in vivo expression of a single stranded DNA enzyme claim 7 wherein the target-binding domains are targeted to the bacterial FtsZ sequences gene.

Claim 9 (currently amended). The plasmid vector of claim 8 wherein the single-stranded DNA enzyme sequence comprises SEQ. ID NO: 6. is specific for a GU site at position 880 of the bacterial FtsZ gene.

Claim 10 (currently amended). The plasmid vector of ~~claim 8~~ claim 7 wherein the single-stranded DNA enzyme catalytic domain comprises GGCTAGCTACAACGA. ~~5'-N₁-GGCTAGCTA-CAACGA-N₂-3' [Seq. ID No. 7] where N₁ and N₂ represent any sequence of nucleotides ranging in size from about seven to about ten nucleotides that target a specific RNA.~~

Claim 11 (currently amended). A cell having the plasmid vector of ~~claim 8~~ claim 7 transformed therein.

Claim 12 (withdrawn). A single-stranded DNA enzyme comprising a 15 nucleotide catalytic domain flanked by random RNA target-binding domains of between about 7 and about 10 nucleotides each.

Claim 13 (withdrawn). The single-stranded DNA enzyme of claim 12 wherein said catalytic domain comprises the sequence 5'-N₁-GGCTAGCTACAACGA-N₂-3' [Seq. ID No. 7], where N₁ and N₂ represent any sequence of nucleotides ranging in size from about seven to about ten nucleotides that target a specific RNA.

Claim 14 (withdrawn). A plasmid having the DNA enzyme of claim 12 contained therein.

Claim 15 (withdrawn). A cell having the plasmid of claim 14 transformed therein.

Claim 16 (new). The bacterial ssDNA expression vector of claim 5 having the genetic composition of plasmid pssXGb.

Claim 17 (new). The bacterial ssDNA expression vector of claim 4, further comprising the sequence of interest, CYGX080103, having SEQ ID NO: 13 or a fragment thereof.

Claim 18 (new). A ssDNA as expressed by the bacterial ssDNA expression vector of claim 8.

Claim 19 (new). A ssDNA as expressed by the bacterial ssDNA expression vector of claim 17.

Claim 20 (new). A composition comprising the vector of claim 4 wherein a sequence of interest is cloned into the cloning site designed to target a bacterial RNA involved in the regulating bacterial growth, killing the bacterial cell, or regulating the synthesis or secretion of bacterial toxin, and a carrier.

Claim 21 (new). A composition comprising the vector of claim 7 wherein a sequence of interest is cloned into the cloning site designed to target a bacterial RNA involved in regulating bacterial growth, killing the bacterial cell, or regulating the synthesis or secretion of bacterial toxin, and a carrier.

Claim 22 (new). A composition comprising the vector of claim 8, a ssDNA as expressed by the vector of claim 8, or a combination thereof and a carrier.

Claim 23 (new). A composition comprising the vector of claim 17, a ssDNA as expressed by the vector of claim 17, or a combination thereof and a carrier.

Claim 24 (new). A composition comprising the vector of claim 16 and a carrier.

Claim 25 (new). A method for treating a bacterial infection using the composition of claim 20.

Claim 26 (new). A method for treating a bacterial infection using the composition of claim 21.